

Counting Alphabet

Write a program that input a string to count how many of each English alphabet (Upper and Lower case count as the same)

Input

A single line of string.

Output

Alphabet in the string, followed by its frequency, one alphabet per line. The alphabets are sorted according to their frequency (large to small).

For equal frequency alphabets, sort them alphabetically (see the example).

Example

Input (from keyboard)	Output (on screen)
AaBbbbbbbCccDddd	b -> 7 d -> 4 a -> 2 c -> 2

Hint

Assuming we use a list

```
x = [[ 2, "b"], [ 3, "f"], [ 4, "x"], [ 2, "a"]]
```

Change list x into

```
[[ -2, "b"], [ -3, "f"], [ -4, "x"], [ -2, "a"]]
```

Arrange from small to large

```
[[ -4, "x"], [ -3, "f"], [ -2, "a"], [ -2, "b"]]
```

If we do not consider the negative sign, this is sorting (large to small) by the first data, and then sorting (alphabetically) by the second data.

```
[[ 4, "x"], [ 3, "f"], [ 2, "a"], [ 2, "b"]]
```